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Proposed Plan for the 100-IU-1, 100-IU-3, 100-IU-4, and 100-IU-5 Operable Units

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PROPOSED PLAN FOR THE 100-IU-1, 100-IU-3, 100-IU-4, AND 100-IU-5 OPERABLE UNITS

Hanford Site, Richland, Washington

DOE, EPA, AND ECOLOGY ANNOUNCE PROPOSED PLAN

This proposed plan identifies the preferred alternative for the Riverland Rail Yard, the Wahluke Slope, the Sodium Dichromate Barrel Landfill, and the White Bluffs Pickling Acid Crib, located at the Hanford Site (Figure 1). These areas are known respectively as the 100-IU-1, 100-IU-3, 100-IU-4, and 100-IU-5 **Operable Units**. Between 1992 and 1994, each of the four operable units was the subject of an **expedited response action** that addressed removal of site contaminants in soil. Waste sites in the 100-IU-2 (White Bluffs Townsite) and 100-IU-6 (Hanford Townsite) Operable Units will be addressed in future proposed plans.

The U.S. Department of Energy (DOE) is the responsible agency for all operable units presented in this proposed plan. This proposed plan is being issued by the Washington State Department of Ecology (Ecology) as the lead regulatory agency for the 100-IU-3 and 100-IU-4 Operable Units; the U. S. Environmental Protection Agency (EPA) is the support agency. The EPA is the lead regulatory agency for the 100-IU-1 and 100-IU-5 Operable Units, and Ecology is the support agency. Ecology, the EPA, and the DOE are issuing this proposed plan as part of their public participation responsibilities under Section 117(a) of the *Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)* commonly known as the "Superfund Program." The DOE is also issuing this proposed plan as part of its responsibilities under the *National Environmental Policy Act of 1969*.

A proposed plan is intended to be a fact sheet for public review that summarizes the information relied upon to recommend the preferred alternative. As presented in this proposed plan, no further action is the preferred alternative for the final resolution of the 100-IU-1, 100-IU-3, 100-IU-4, and 100-IU-5 Operable Units. The preferred alternative is recommended because all suspect hazardous substances above cleanup levels have been removed from the waste sites, and the sites are unlikely to pose

any significant risk to human health or the environment.

The preferred alternative is the initial recommendation of Ecology, the EPA, and the DOE. Members of the public are encouraged to comment on the four operable units and the preferred alternative during a public comment period. The final decision will be made only after the public has had the opportunity to comment on this recommendation, and all comments have been reviewed and considered. Written comments should be submitted by August 9, 1995. Public comments will be addressed in a responsiveness summary as part of the **record of decision**, which is the legal decision that specifies the cleanup remedy.

MARK YOUR CALENDAR

A 45-day public comment period for the 100-IU-1, 100-IU-3, 100-IU-4, and 100-IU-5 Operable Units proposed plan is scheduled from June 26, 1995, through August 9, 1995.

Send written comments to

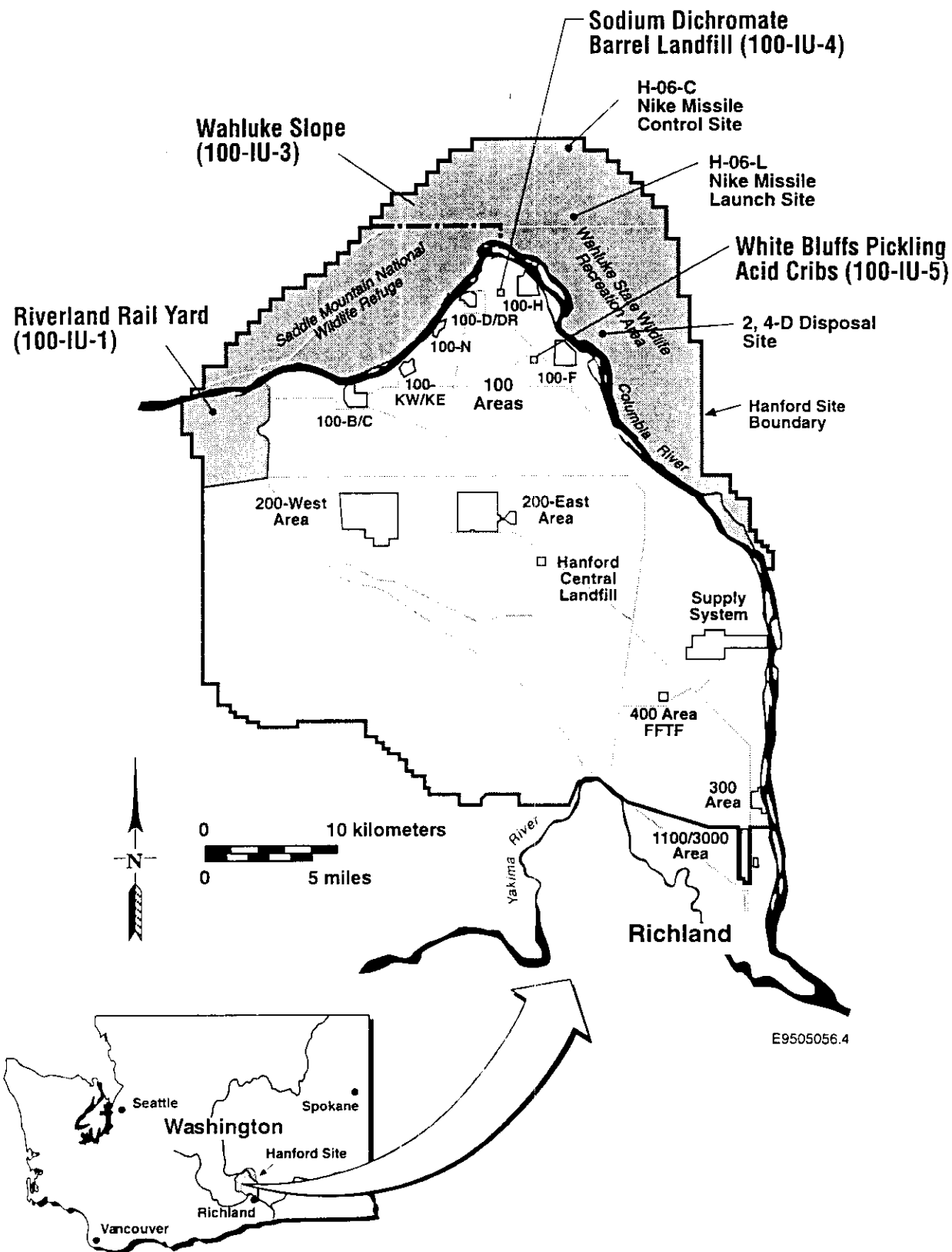
Gary Freedman, Unit Manager
Washington State Department of Ecology
1315 West Fourth Avenue
Kennewick, WA 99336-6018

At this time, no public meeting has been scheduled for this proposed plan. However, to request a public meeting, contact

Dennis Faulk, Unit Manager
U.S. Environmental Protection Agency
(509) 376-8631

The public is encouraged to review the following supporting documents: *Riverland Expedited Response*

Figure 1. Location Map



Action Assessment Report (DOE/RL-94-30) for the 100-IU-1 Operable Unit; *Draft Interim Close-Out Report North Slope (Wahluke Slope) Expedited Response Action, Hanford, Washington* (DOE/RL-94-138) for the 100-IU-3 Operable Unit; *Sodium Dichromate Expedited Response Action Assessment Report* (DOE/RL-93-64), Rev. 1 for the 100-IU-4 Operable Unit; and the *Pickling Acid Crib Remedial Investigation/Feasibility Study* (DOE/RL-94-20) for the 100-IU-5 Operable Unit. The Administrative Record contains these documents as well as other documents and information relied upon for the recommendation of the preferred alternative.

HANFORD SITE BACKGROUND

The Hanford Site is located in southeastern Washington (Figure 1). The 100 Area of the Hanford Site is located along the Columbia River. The area south of the river includes nine DOE nuclear reactors that were used for plutonium production between 1943 and 1987. In November 1989, the EPA placed the 100 Area on the **National Priorities List** because of soil and groundwater contamination that had resulted from past operation of the nuclear facilities.

A buffer area was defined north of the Columbia River and is referred to as the Wahluke Slope. This area is separated from all Hanford facilities by the river. State Highway 24 travels through much of the Wahluke Slope.

The 1990 *Hanford Federal Facility Agreement and Consent Order* states that, "Where immediate danger to the public or environment is possible, where the problem is straightforward, or where the area could be cleaned up using known technology, expedited response actions should be pursued to accelerate remediation of the Hanford Site." An expedited response action is the mechanism that allows for the elimination of potential hazards that can be an immediate threat to the public or environment. The simple nature of environmental problems at these four operable units qualified them for expedited response actions. For each operable unit, expedited response action proposals were presented for a 30-day public comment period before implementation. In addition, a public meeting was held on December 14, 1993, in Mattawa, Washington, on proposed expedited response actions for the Wahluke Slope.

The Hanford site-wide ordnance and explosives waste archive search conducted by the U. S. Army Corps of Engineers (*Ordnance and Explosive Waste Records Search Report*, DOE/RL-94-07) was performed at the same general time as the expedited response actions.

This report concluded that there is little risk from ordnance at the Hanford Site and that no further action is required.

The following subsections provide background information and a summary of expedited response actions for each operable unit.

RIVERLAND RAIL YARD (100-IU-1 Operable Unit)

Background. The Riverland Rail Yard boundaries are Washington State Route 240 on the east, Washington State Highway 24 on the south, the Hanford Site boundary on the west, and the Columbia River on the north. The site is about 34 square kilometers (13 square miles) in size. A small area within the operable unit's boundaries is under Bonneville Power Administration jurisdiction and is not part of the 100-IU-1 Operable Unit.

The Riverland Rail Yard was constructed in 1943 to support Hanford construction and operation activities. The Riverland Rail Yard Maintenance Facility was operated from 1943 until October 1954, when operations were transferred elsewhere on the Hanford Site. Rail car decontamination, however, continued in the two maintenance pits until 1956.

Radioactive decontamination was required and performed at the Riverland Rail Yard before railroad maintenance personnel could make repairs to rail cars and locomotives. Most decontamination activities concentrated on the wheels, axles, brake assemblies, bearing journal housings, and other rail vehicle undercarriage oil- or grease-coated parts. However, the engine compartment, radiators, and fan housings of the diesel locomotives were also decontaminated.

The radioactive contaminant levels on the railroad equipment were minimal and easily removed. Contaminants common to the rail equipment were fission product particles (ruthenium, zirconium, niobium, iodine, and so on). The contamination level was typically very low. Radiation monitoring personnel decontaminated the rail cars with acetone-soaked absorbent pads.

Periodic maintenance of the pit floor consisted of brushing the walls with a broom soaked with diesel fuel then rinsing with water. The rinsate drained through the pit floor drains.

Facility decontamination occurred about 1963, then the Riverland Rail Yard Maintenance facility structures were dismantled and sold. About 0.6

meters (2 feet) of soil were placed over the foundations. Follow-up radiological surveys in 1977, 1978, and 1993 of the maintenance facility site and the area where drain pipe had been removed, revealed only natural background radiation levels.

The 100-IU-1 Operable Unit contained three waste sites: the pesticide container site, the Riverland Rail Yard Maintenance Facility, and a munitions cache. Based on results of radiological surveys, the operable unit is considered nonradioactive. Two former military installations, a military debris dump site, and a former fish farm were also at this unit. Cleanup of these sites was completed as routine site maintenance activities by the DOE; no hazardous materials were encountered. A 2,4-D pesticide container site was discovered after the expedited response action cleanup activity was underway. The 2,4-D container site was added as a potentially hazardous waste site to the 100-IU-1 Operable Unit.

A munitions cache that received various military explosives in the 1970's is also part of this operable unit. The explosives were remnants from various military exercises held in the area. The site consisted of a wooden box placed in a hole in the ground up to 1 meter (3 feet) wide and 0.6 meter (2 feet) deep. In 1986 the box, with contents, was removed and sent to the Yakima Firing Range for destruction. The empty hole was all that remained at the site. No contamination was detected during sampling.

An operable unit visual inspection found one homestead site containing a pile of empty pesticide containers. The condition of the containers suggested they were placed there after the Hanford Project was well underway. Characterization activities identified aldrin and dieldrin as the **contaminants of concern**. These chemicals were produced as a pesticide for 10 years, from the early 1950's to early 1960's.

Contamination of **groundwater** is not known to be associated with the 100-IU-1 Operable Unit. There are two shallow groundwater monitoring wells within the operable unit: Well 699-66-103, located downgradient of the Riverland Maintenance Shop site and Well 699-68-105, located downgradient and to the northwest of 699-66-103. Sample analysis data from 1971 to 1994 indicate no contamination problems.

Work Performed and Sampling Results. In 1992 the EPA and Ecology selected the 100-IU-1 Operable Unit for remediation as an expedited response action. In April the DOE prepared an engineering evaluation/cost analysis that evaluated technologies

applicable to remedial alternatives available for 100-IU-1. The engineering evaluation/cost analysis is presented as part of the *Riverland Expedited Response Action Proposal* (DOE/RL-93-01). The proposal was reviewed by the EPA and Ecology and was made available for a 30-day public comment period. An Action Memorandum issued in June 1993 by the EPA and Ecology directed the DOE to cleanup the Riverland Rail Yard Maintenance Facility and the pesticide container sites, perform an ordnance survey, and fill in the munitions cache hole. The goal of the expedited response action was to reduce the potential for contaminant migration to the soil column, groundwater, and the Columbia River.

At the Rail Yard Maintenance Facility, about 260 cubic meters (340 cubic yards) of concrete were removed and recycled through a concrete recycling plant. Three hundred and thirty cubic meters (430 cubic yards) of diesel contaminated soil were removed and sent off the Riverland Rail Yard site for **bioremediation**. The excavated areas were sampled and then backfilled with clean soils available onsite.

Following the removal of contaminated concrete and soil, the remaining soil was sampled and analyzed for diesel fuel and heavy motor oil. At the Rail Yard Maintenance Shop site a total of 24 soil samples were collected for total petroleum hydrocarbon analysis. The primary contaminants of concern were diesel fuel and motor oil. The total petroleum hydrocarbon cleanup level for soil is 200 parts per million based on residential cleanup levels in the *Model Toxics Control Act*. No diesel fuel or heavy motor oil contamination above the 2 parts per million laboratory detection limit was found during final cleanup sampling.

The 2,4-D Container Site was discovered in July 1994 during a Pacific Northwest Laboratory archaeological survey. Two empty 5-gallon containers were found on the surface among some sagebrush. In addition, nine 5-gallon containers, with just the pour spouts exposed, were found buried among the sage brush. Only one buried container contained a small volume of liquid. Partial container markings indicated that the containers may have held 2,4-D. The condition of the containers and surrounding vegetation indicated that the containers were buried after the Hanford Project was well underway. No contaminated soil around or beneath the containers was found during characterization of the 2,4-D site. Liquid sampling volume requirements collected all the liquid available at the site. Based on the sampling results of liquid, the empty containers were designated non-hazardous and the site was cleaned up.

At the pesticide container site, onsite field screening was used to monitor cleanup activity success. Final excavated site dimensions were 2.1 x 5.3 meters (7 x 17.5 feet). The depth varied from 15-20 centimeters (6-8 inches) on the east end to 61-76 centimeters (24-30 inches) on the west end. A total of twenty seven 208 liter (55 gallon) drums were filled with waste. Two drums contained 15 crushed pesticide containers. The remaining twenty five drums contain aldrin and dieldrin contaminated soils. All drums were sent to the Hanford Central Landfill (Figure 1), rather than a hazardous waste landfill, because contaminant levels did not exceed dangerous waste thresholds. Five soil samples were collected after the excavation and analyzed for aldrin and dieldrin. The highest concentration for either pesticide was 3.6 parts per billion for dieldrin. According to risk calculations based on the State of Washington's *Model Toxics Control Act*, the residential cleanup level must be below 2 parts per million as an acceptable level of risk to human health or the environment. Final cleanup sampling results are below the cleanup level. Also, the munitions cache hole was sampled and no contamination was found. The hole was then filled with clean backfill material.

Final cleanup sampling results are below cleanup levels. Final soil sampling results for these four sites indicate that there is unlikely to be significant risk to human health or the environment associated with the constituents detected in the soil. According to risk calculation based on the State of Washington's *Model Toxics Control Act*, the residential cleanup level provides an acceptable level of risk to human health or the environment at the 100-IU-1 Operable Unit.

WAHLUKE SLOPE (100-IU-3 Operable Unit)

Background. The Wahluke Slope contained anti-aircraft artillery and missile sites that were used to defend the Hanford Site; plutonium production reactors or storage facilities for radioactive materials were never built on the slope. As the defense requirements for Hanford changed, the artillery and missile sites were deactivated between 1960-1961 and were eventually razed in 1974.

The U.S. Fish and Wildlife Service manages the Saddle Mountain National Wildlife Refuge, which occupies the southwestern part of the Wahluke Slope. The Washington State Department of Wildlife manages the remaining portions of the Wahluke Slope north and east of the Columbia River as the Wahluke State Wildlife Recreation Area (Figure 1).

During 1989 and 1990, an investigation of the Wahluke Slope was performed by the DOE to assess the potential health, safety, and environmental concerns raised by Ecology and the public. As a result of that survey, 39 sites associated with military or homesteading activities were identified as having the potential for environmental contamination. Many of the sites were landfills for military installations. In 1993, the DOE prepared an engineering evaluation and cost analysis concerning technologies applicable to the Wahluke Slope sites. The evaluation and cost analysis are summarized in the *North Slope (Wahluke Slope) Expedited Response Action Cleanup Plan*, (DOE/RL-93-47). The proposal was reviewed by the EPA and Ecology, and was made available for a 30-day public comment period. Based on public comment, Ecology issued an Action Memorandum on March 17, 1995, recommending that full scale hazard mitigation and the proper abandonment of water wells be performed.

From 1992 through 1994, a non-time critical expedited response action was carried out on 39 Wahluke Slope sites. Contaminants included asbestos-containing materials, organic solvents, petroleum products, paint, grease, the pesticide DDT and its associated breakdown products. Contaminated media included soil, concrete, and miscellaneous debris. Please note that only the H-06-L Nike Missile Launch site, the H-06-C Nike Missile Control Site, and the 2,4-D Disposal site are identified on the 100 Area National Priorities List. No groundwater contamination has been associated with the 100-IU-3 Operable Unit.

Work Performed and Sampling Results. Expedited response action cleanup activities included landfill excavation, water well decommissioning, physical hazard mitigation, contaminant segregation, and off-site disposal. During landfill excavations and debris removal, suspect materials were segregated. Samples were sent offsite for characterization, leading to the ultimate disposal of the waste. Uncontaminated materials were returned to the excavation. Landfill excavations were backfilled and compacted with clean fill and graded to original conditions. Physical hazard mitigation included elimination of tripping hazards, removal of trash and debris remaining at old military sites, and backfilling underground bunkers, septic tanks, and homestead cisterns. Waste disposed offsite included 460 cubic meters (600 cubic yards) of soil contaminated with DDT, 150 cubic meters (200 cubic yards) of soil contaminated with petroleum, small amounts of soil contaminated with metals from paint and tar-like waste, and small amounts of soil taken from beneath several pesticide cans.

Soil was excavated until the Washington State *Model Toxics Control Act* cleanup criteria were met as determined by field screening. According to risk calculations based on the *Model Toxics Control Act*, the residential cleanup level provides an acceptable level of risk to human health and the environment. Final cleanup sampling results are below the cleanup level. No hazardous substances that were discovered remain on site. Revegetation is ongoing for the areas of the Wahluke Slope that were disturbed by cleanup activity.

SODIUM DICHROMATE BARREL LANDFILL (100-IU-4 Operable Unit)

Background. The Sodium Dichromate Barrel Landfill was located within the 100 Area of the Hanford Site between the 100-D and 100-H Reactor Areas (Figure 1). The site is 469 meters (1,540 feet) long and 91 meters (300 feet) wide, with an area of about 4.3 hectares (10.6 acres). Little historical documentation for this site is available. During the years of reactor operations, large quantities of sodium dichromate were delivered in barrels to the Hanford Site. The sodium dichromate was added to reactor cooling water as a soluble corrosion inhibitor. In 1945, the 100-IU-4 Operable Unit became a disposal area for these empty, crushed barrels. The site is not known to have received significant quantities of other waste types.

The Sodium Dichromate Barrel Landfill is the only waste site located within the 100-IU-4 Operable Unit. Groundwater beneath the 100-IU-4 Operable Unit is part of the 100-HR-3 Groundwater Operable Unit and will be addressed in a future proposed plan. Groundwater monitoring results indicate that the 100-HR-3 Groundwater Operable Unit has elevated chromium levels that do not originate from and are not attributable to the 100-IU-4 Operable Unit.

Because hexavalent chromium is a carcinogen and poison, in 1992 Ecology and the EPA selected the Sodium Dichromate Barrel Landfill for remediation as an expedited response action. The DOE prepared an engineering evaluation and cost analysis concerning technologies applicable to the sodium dichromate landfill. The evaluation and cost analysis are summarized in the *Sodium Dichromate Barrel Landfill Expedited Response Action Proposal* (DOE/RL-93-25). The proposal was reviewed by the EPA and Ecology, and was made available for a 30-day public comment period. The majority of public comments favored complete excavation and removal of the empty crushed barrels from the site. An Action Memorandum issued on March 8, 1993, by Ecology

and the EPA directed the DOE to excavate all waste materials buried at the site as an expedited response action.

Work Performed and Sampling Results. Excavation activities began March 17, 1993, and ended April 26, 1993. Four burial locations identified by ground penetrating radar surveys and twenty-six surface locations contained empty, crushed sodium dichromate barrels. Approximately 5,000 crushed drums and the surrounding soil were excavated and disposed at the Hanford Central Landfill (Figure 1) because contaminant levels did not exceed dangerous waste thresholds.

During excavation of the crushed drums, 106 field measurements for sodium dichromate were taken from the soil surrounding the drums. These measurements were taken to determine if site soils had been contaminated and would also require excavation. In addition, 56 confirmatory soil samples were collected for chromium analysis at an offsite laboratory.

Information presented in the *Sodium Dichromate Barrel Landfill Expedited Response Action Proposal* (DOE/RL-93-25) identified chromium as the contaminant of concern in the soil at the 100-IU-4 site. Laboratory analytical results obtained during and after expedited response actions indicated that the contaminants of concern remaining in the soil are at or below background concentrations. These concentrations do not exceed risk-based residential cleanup levels stated in the State of Washington's *Model Toxics Control Act* soil cleanup standards. These standards provide an acceptable level of risk to human health and the environment.

Final soil sampling results indicate that there is unlikely to be significant risk to human health or the environment associated with constituents detected in the soil at the 100-IU-4 Operable Unit.

WHITE BLUFFS PICKLING ACID CRIBS (100-IU-5 Operable Unit)

Background. The White Bluffs Pickling Acid Cribbs are located about 2 kilometers (1.2 miles) west of the 100-F Reactor (Figure 1). The two cribs that make up the 100-IU-5 Operable Unit are just south of the former town of White Bluffs. The cribs consist of excavated trenches filled with exposed gravel and cobbles. The cribs lie side by side and are each approximately 61 meters long by 15 meters wide (200 feet by 50 feet). Together, the cribs occupy an area of 0.2 hectare (0.5 acre). They vary in depth from about 2 meters to 3.1 meters (7 to 11 feet).

The White Bluffs area was the location of construction activities for the Hanford Site between 1943 and 1959. After construction operations ended, all of the White Bluffs construction support facilities were demolished. Little is known about the use of the cribs during the years of construction activity. It is known, however, that a pipe fabrication facility, formerly located near the cribs, prepared piping for installation in the reactor facilities. Therefore, it is presumed that during the years of construction activity, the pipe fabrication facility sent waste streams to the cribs through underground pipelines. The waste streams were believed to be primarily acid etch solutions containing spent nitric and hydrofluoric acids. No known radioactive contaminants were discharged into the cribs.

The 100-IU-5 Operable Unit addresses only soil contamination associated with the White Bluffs Pickling Acid Cribs. Groundwater contamination in the vicinity of the 100-IU-5 Operable Unit is to be addressed in a future proposed plan as part of the 100-FR-3 Operable Unit, the groundwater operable unit for the 100-F Reactor Area.

Work Performed and Sampling Results. The EPA and Ecology recommended in a letter dated March 4, 1992, that the DOE proceed with an expedited response action at the White Bluffs Pickling Acid Cribs site. The DOE proceeded by preparing an *Expedited Response Action Project Plan* (WHC-SD-EN-AP-113). The project plan detailed activities that would be undertaken as part of the expedited response action proposal for site characterization and provided a preliminary screening of potential remedial action alternatives. Site characterization activities conducted in November 1992 included geophysical exploration, collecting, and analyzing 46 surface and subsurface soil samples taken from the cribs.

During soil sampling, an elevated concentration of zinc detected in a single soil sample was associated with a piece of galvanized metal and was not considered to be related to former waste disposal activities. While the zinc concentration in soil exceeded the background concentration for zinc, it was below risk-based residential cleanup levels in the *Model Toxics Control Act*.

The *White Bluffs Pickling Acid Cribs Expedited Response Action Proposal* summarized the results of site investigations. Laboratory analytical results indicate that, with the exception of zinc, contaminants of concern are present below background concentrations. Soil samples were analyzed for a broad spectrum of potential contaminants. No

contaminants exceeding risk-based residential cleanup levels presented in the Washington State *Model Toxics Control Act* soil cleanup standards were detected in any of the samples. These standards provide an acceptable level of risk to human health and the environment.

Soil sampling results indicate that there is unlikely to be significant risk to human health or the environment associated with the constituents detected in soil at the 100-IU-5 Operable Unit. As a result of these findings, the EPA recommended that the DOE proceed with completion of a remedial investigation/feasibility study report and preparation a proposed plan for public review and comment that recommends no further action at the operable unit. Because no hazardous materials above health concerns were identified, an Action Memorandum was not prepared.

DESCRIPTION OF THE NO FURTHER ACTION PREFERRED ALTERNATIVE

The expedited response actions resulted in the removal of hazardous constituents in the soil and concluded that any residual contaminants identified in soil at the waste sites are below *Model Toxics Control Act* residential cleanup levels and are unlikely to pose a significant threat to human health or the environment. Therefore, the preferred alternative recommended for the 100-IU-1, 100-IU-3, 100-IU-4, and 100-IU-5 Operable Units is no further action. Ecology and the EPA support the selection of the no further action alternative.

SUPPORTING DOCUMENTS

The public is encouraged to review the following documents to gain a better understanding of the 100-IU-1, 100-IU-3, 100-IU-4, and 100-IU-5 Operable Units:

100-IU-1 Operable Unit

- *Riverland Expedited Response Action Proposal* (DOE/RL-93-01), Rev. 0
- *Riverland Expedited Response Action Assessment Report* (DOE/RL-94-30), Draft A
- *Ordnance and Explosive Waste Records Search Report* (DOE/RL-94-07), Rev. 0

100-IU-3 Operable Unit

- *Draft Interim Close-Out Report North Slope (Wahluke Slope) Expedited Response Action, Hanford, Washington* (DOE/RL-94-138)
- *A Compendium of Field Reports for the North Slope (Wahluke Slope) Expedited Response Action, Hanford, Washington* (DOE/RL-94-139)

- *North Slope (Wahluke Slope) Expedited Response Action Cleanup Plan* (DOE/RL-93-47), Rev. 0
- *Ordnance and Explosive Waste Records Search Report* (DOE/RL-94-07), Rev. 0

100-IU-4 Operable Unit

- *Sodium Dichromate Expedited Response Action Assessment Report* (DOE/RL-93-64), Rev. 2
- *Sodium Dichromate Barrel Landfill Expedited Response Action Proposal* (DOE/RL-93-25), Rev. 0

100-IU-5 Operable Unit

- *White Bluffs Pickling Acid Crib Expedited Response Action Project Plan* (WHC-SD-EN-AP-113), Rev. 0
- *White Bluffs Pickling Acid Crib Expedited Response Action Proposal* (DOE/RL-93-48), Draft A
- *Pickling Acid Crib Remedial Investigation/ Feasibility Study* (DOE/RL-94-20), Rev. 0

ADMINISTRATIVE RECORD

The Administrative Record can be reviewed at the following locations:

U. S. Department of Energy - Richland Operations
Administrative Record
2440 Stevens Center Place
Room 1101
Richland, WA 99352
(509) 376-2530
ATTN: Debbi Isom

Labat-Anderson, Inc.
C/O US Environmental Protection Agency
1200 6th Avenue
Seattle, WA 98101
(206) 553-4494
ATTN: Karen Prater

Washington State Department of Ecology
Nuclear Waste Program
300 Desmond Drive SE
Lacey, WA 98503
(360) 407-7097
ATTN: Marilyn Smith

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ATTN: Terri Traub

GLOSSARY

Bioremediation - A biological cleanup technology that uses living microorganisms to consume and destroy contaminants in soil or groundwater. The technology, usually directed toward cleanup of organic contaminants, is usually cost-effective and can be performed in place or in special treatment cells.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - This is a federal law that establishes a program that enables the Environmental Protection Agency to identify hazardous waste sites, ensure that they are cleaned up, and allow other government entities to evaluate damages to natural resources. CERCLA is also known as the "Superfund law." CERCLA applies to the 100-IU-1, 100-IU-3, 100-IU-4, and 100-IU-5 Operable Units, among others at the Hanford Site.

Contaminants of Concern - These are chemical and radioactive constituents that must be addressed by remedial action, such as an expedited response action.

Chromium - A metallic element that can be an environmental pollutant. Chromium commonly occurs in two forms in the environment, *trivalent*, and *hexavalent*. Hexavalent chromium is a human carcinogen.

Expedited Response Action - A response action that can be taken to address contamination problems that pose time critical risks. A non-time critical expedited response action is utilized for releases requiring removal actions that can start later than six months after a determination that a response is necessary.

Groundwater - Underground water that fills the spaces between particles of soil, sand, gravel, or fractures in rocks.

Model Toxics Control Act - A regulation set forth by the State of Washington that provides risk-based cleanup levels for hazardous materials in the environment that are protective of human health and the environment.

National Priorities List - A list of top-priority hazardous waste sites in the United States that are eligible for investigation and cleanup under the Superfund program.

Operable Unit - This is a subset of a larger Superfund CERCLA site, typically the subject of operable unit-specific investigations and remedial actions. Most operable units in the 100 Area of the Hanford Site are located near the deactivated nuclear reactors; the 100-IU-1, 100-IU-3, 100-IU-4, and 100-IU-5 operable units are isolated from the reactors and, hence, have been given the label "IU."

Record of Decision - The formal document in which the lead regulatory agency sets forth the selected remedial measure and the reasons for its selection.

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